

Statewide Toxics Monitoring Program for Surface Water



State of Oregon
Department of
Environmental
Quality

Laboratory and Environmental Assessment

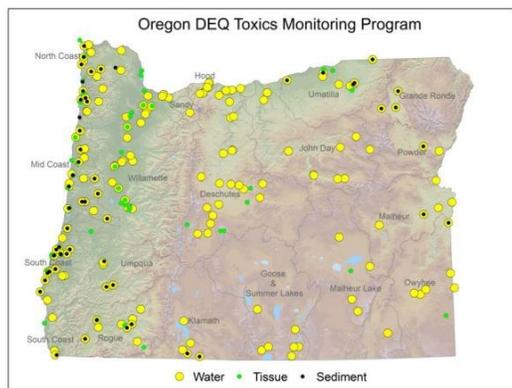
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Background

The Oregon Department of Environmental Quality received funds from the 2007 Oregon Legislature to establish a statewide, watershed-based toxics monitoring program to assess the presence and concentration of toxic pollutants (toxics) in Oregon's waters. DEQ's goal was to monitor all major basins in the state during a five-year cycle. DEQ began implementing this program in 2008 in the Willamette River Basin.

The program grew out of the public's concern about toxic pollutants in the environment. The term "toxics" incorporates a very wide range of substances, many of which are not currently regulated. DEQ's monitoring provides a better understanding of potential sources and the extent of toxics in the environment, and informs efforts to reduce their presence in the environment.

From 2008 to 2013, DEQ Laboratory staff collected and analyzed water, sediment and fish samples from 177 sites in all major basins across the state. These sites included coastal estuaries, large rivers and small streams. The laboratory analyzed samples for more than 500 different chemicals. The first statewide summary report was completed in 2015. DEQ began the second five-year cycle of toxics monitoring in 2015 by revisiting basins monitored in the first cycle and will be monitoring lakes in 2017.



Sampling sites for the 2008-2013 Toxics Monitoring Program.

Toxics in Oregon's Waters

DEQ monitored for toxic pollutants including: legacy chlorinated pesticides, current-use pesticides, priority pollutant metals such as copper and arsenic, industrial chemicals, flame retardants, combustion by-products,

pharmaceuticals and other personal care products.

Toxic pollutants may come from many sources: surface runoff from roads and parking lots, urban and agricultural lands, soil erosion, discharges from industrial and municipal facilities, contaminated sediment and air pollution from local sources or from around the world.



Key Findings

Several key findings from the 2015 summary report:

- 128 unique chemicals detected in water samples
- Most detected chemicals were at very low concentrations and within applicable criteria or benchmarks for environmental and human health
- Detections of current-use pesticides occurred in all basins, often as mixtures and, at times, above EPA aquatic life benchmarks; diuron (an herbicide) detected in all but one basin
- Legacy pesticides present in water; frequently above DEQ human health criteria
- Priority metals (such as copper and lead) present at levels above DEQ aquatic life criteria
- Arsenic and inorganic arsenic detected at levels above DEQ human health criteria, mainly in Eastern Oregon and in Oregon's coastal estuaries
- Flame retardants detected around the state in urban and rural areas
- Polycyclic aromatic hydrocarbons (PAHs, which are combustion by-products from fires, vehicle combustion and waste incineration) detected above DEQ human health criteria at several locations

- Samples from urban areas in the Willamette River Basin and agricultural areas in the Hood River Basin contained the largest variety of chemicals and the largest frequency of samples with at least one chemical over a criteria or benchmark
- Most samples with at least one chemical over a criteria or benchmark occurred in the Hood River Basin
- Sites in agricultural land had the most unique detections and range land had the fewest detections
- Current-use pesticides, legacy pesticides, polycyclic aromatic hydrocarbons and certain metals are of particular concern for human health and aquatic life impacts in Oregon and will require continued monitoring
- Mercury was frequently found in fish at levels above fish consumption screening values

Next Steps

This initial five-year study will serve as a baseline for future DEQ toxics water quality monitoring studies on a five-year basin rotation basis.

DEQ will revisit some previously monitored sites to evaluate changes in toxic chemicals over time as well as add new sites. DEQ is working closely with watershed councils, environmental groups, and state, federal and tribal natural resource agencies in compiling information and designing the toxics monitoring program. Land

use, past contamination, human population and point source discharges are all factors in choosing monitoring sites.

In 2017, DEQ will be partnering with EPA’s National Lakes Assessment in Oregon. By monitoring toxic chemicals in an existing lake evaluation, DEQ will gather information statewide from an aquatic resource not typically sampled for toxic chemicals in an efficient and cost-effective manner.

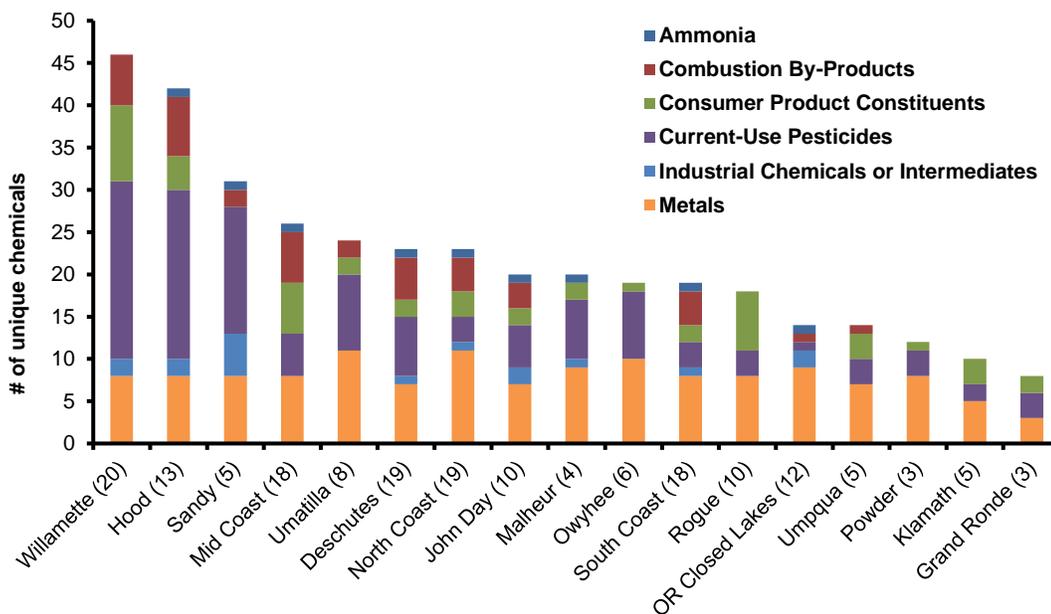
DEQ expects to continue to implement the Toxics Monitoring Program over time as resources allow. DEQ will continue to work with partners and stakeholders to identify sources of toxics in their watersheds and to implement monitoring programs to assess them.

Additional Information

For more information on the findings of DEQ’s Toxics Monitoring Program and about efforts to reduce the presence of toxics in the environment please visit DEQ’s web page at: <http://www.oregon.gov/deq/wq/Pages/WQ-Monitoring-Statewide.aspx>.

Alternative formats

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.



The number of unique chemicals detected per basin. The number of sites in each basin is in parentheses.